IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:
  Agarwal, et al.

Atty. Docket No.: JP920030194US1

Serial No.: 10/729,803

Group Art Unit: 3627

Filed: December 5, 2003

Examiner: Michael A. Cuff

For: RESOURCE USAGE METERING OF NETWORK SERVICES

AMENDMENT UNDER 37 C.F.R. §1.116

Mail Stop Non-Fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This amendment is in response to the Office Action mailed May 16, 2008, setting

a three-month statutory period for response, which supersedes the Office Action dated

October 9, 2007. Therefore, this amendment is timely filed. Please amend the above-

identified patent application as follows:

IN THE CLAIMS:

Please amend the claims as follows:

1.   (Currently Amended) A method for metering use of <u>network-accessible </u>computer resources <u>by multiple users of the computer resources during a same time period</u>, said method comprising ~~the steps of~~:

recording, as process accounting information, the use of <u>the computer </u>~~computing~~ resources for a plurality of processes that relate to service requests made by <u>the </u>users;

recording service request information for the service requests made by the users;

correlating the recorded process accounting information and the recorded service request information; <u>and</u>

providing resource usage information for each of the service requests <u>for each of the users </u>based upon the correlated recorded process accounting information and the recorded service request information<u>, said providing comprising allocating overlapping usage of the computer resources between at least two overlapping service requests, the overlapping service requests being from different users, by one of evenly splitting the overlapping usage between the overlapping service requests and splitting the overlapping usage in a weighted manner based upon respective durations of the overlapping service requests</u>

~~; and allocating resource usage to service requests that simultaneously use a computing resource between overlapping requests~~.

2.	(Cancelled).

3.	(Currently Amended) The method according to claim 1, ~~all the limitations of which are incorporated herein by reference,~~ further comprising the step of correlating request logging information and usage logging information.

4.	(Currently Amended) The method according to claim 1, ~~all the limitations of which are incorporated herein by reference,~~ wherein the plurality of processes include processes dynamically spawned by processes for which process accounting information is recorded.

5.	(Currently Amended) The method according to claim 1~~, all the limitations of which are incorporated herein by reference~~, further comprising the step of maintaining an active request list of the service requests made by the users.

6.	(Currently Amended) The method according to claim 1, ~~all the limitations of which are incorporated herein by reference,~~ wherein separate active lists are maintained for each of the processes.

7.	(Currently Amended) The method according to claim 1, ~~all the limitations of which are incorporated herein by reference,~~ further comprising the step of calculating a

relative weight of each of the service requests.

8.   (Currently Amended) The method according to claim 7, ~~all the limitations of~~
~~which are incorporated herein by reference,~~ further comprising the step of allocating the
resource usage in proportion to calculated relative weights to the service requests.

9.   (Currently Amended) A computer system for metering the use of <u>network-</u>
<u>accessible</u> computer resources <u>by multiple users of the computer resources during a same</u>
<u>time period, said computer resources</u> comprising computer software recorded on a
computer-readable medium[[,]] <u>and</u> said computer system comprising:

   means for recording, as process accounting information, the use of <u>the computer</u>
~~computing~~ resources for a plurality of processes that relate to service requests made by
<u>the</u> users;

   means for recording service request information for the service requests made by
the users;

   means for correlating the recorded process accounting information and the
recorded service request information; <u>and</u>

   means for providing resource usage information for each of the service requests
<u>for each of the users</u> based upon the correlated recorded process accounting information
and the recorded service request information<u>, said providing comprising allocating</u>
<u>overlapping usage of the computer resources between at least two overlapping service</u>
<u>requests, the overlapping service requests being from different users, by one of evenly</u>

splitting the overlapping usage between the overlapping service requests and splitting the

overlapping usage in a weighted manner based upon respective durations of the

overlapping service requests; and

~~means for allocating resource usage to service requests that simultaneously use a computing resource between overlapping requests~~.

10.   (Currently Amended) A computer program product for metering the use of

network-accessible computer resources by multiple users of said computer resources

during a same time period, said computer resources comprising computer software

recorded on a computer-readable medium for performing the steps of:

    recording, as process accounting information, the use of the computer ~~computing~~

resources for a plurality of processes that relate to service requests made by the users;

    recording service request information for the service requests made by the users;

    correlating the recorded process accounting information and the recorded service

request information; and

    providing resource usage information for each of the service requests for each of

the users based upon the correlated recorded process accounting information and the

recorded service request information, said providing comprising allocating overlapping

usage of the computer resources between at least two overlapping service requests, the

overlapping service requests being from different users, by one of evenly splitting the

overlapping usage between the overlapping service requests and splitting the overlapping

usage in a weighted manner based upon respective durations of the overlapping service

requests ~~; and~~

~~allocating resource usage to service requests that simultaneously use a computing~~
~~resource between overlapping requests.~~

11. (Currently Amended) A system for metering the use of network-accessible ~~computing~~ computer resources by multiple users of the computer resources during a same time period, said system comprising:

at least one computer server operable for executing service requests made by the users;

a monitoring agent associated with the computer server and operable for being able to access process accounting information for processes executing the service requests stored in operating system logs of the computer server;

a request logging module operable for maintaining records of the service requests;

a usage logging module operable for maintaining records of the process accounting information obtained from the monitoring agent; ~~and~~

a resource usage database operable for maintaining records of resource usage information relating to service requests; and

a correlator operable for ~~by~~ correlating the records of the request logging module and the records of the usage logging module~~; and a correlator operable for~~ in order to allocate overlapping usage of the computer resources between at least two overlapping service requests, the overlapping service requests being from different users, by one of evenly splitting the overlapping usage between the overlapping service requests and

splitting the overlapping usage in a weighted manner based upon respective durations of

the overlapping service requests

~~a correlator operable for allocating resource usage to service requests that~~

~~simultaneously use a computing resource between overlapping requests~~.

12.   (Currently Amended) The system according to claim 11, ~~all the limitations of~~

~~which are incorporated herein by reference,~~ further comprising a query module for

accessing the records of resource usage information stored in the resource usage database

in response to queries.

13.   (Cancelled).

14.   (Currently Amended) The system according to claim 11, ~~all the limitations of~~

~~which are incorporated herein by reference,~~ further comprising means for correlating

request logging information and usage logging information.

15.   (Currently Amended) The system according to claim 11, ~~all the limitations of~~

~~which are incorporated herein by reference,~~ further comprising means for maintaining an

active request list of the service requests made by the users.

16.   (Currently Amended) The system according to claim 11, ~~all the limitations of~~

~~which are incorporated herein by reference,~~ further comprising means for calculating a

relative weight of each of the service requests.

17.   (Currently Amended) The system according to claim 16, all the limitations of which are incorporated herein by reference, further comprising means for allocating the resource usage in proportion to calculated relative weights to the service requests.

18-21. (Cancelled)

REMARKS

Claims 1, 3-12, and 14-21 were previously presented. A similar feature to that contained in claims 18-21 is amended herein into independent claims 1, 9, 10 and 11. Therefore, claims 18-21 are cancelled. Thus, claims 1, 3-12 and 14-17, all the claims presently pending in the application. It should be noted that the Applicants are not conceding that the subject matter encompassed by claims 1, 3-12 and 14-17, prior to this Amendment, is not patentable over the art cited by the Examiner. Claims 1, 3-12 and 14-17 are amended solely to facilitate expeditious prosecution. Applicants respectfully reserve the right to pursue claims, including the subject matter encompassed by claims 1, 3-12 and 14-17, as presented prior to this Amendment and additional claims in one or more continuing applications.

Claims 1, 3-12, and 14-17 stand rejected on prior art grounds. Applicants respectfully traverse these rejections based on the following discussion.

I.   The 35 U.S.C. §112, Second Paragraph, Rejection

Claims 18-21 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As these claims have been cancelled the rejection is now moot. However, since a similar feature to that contained in claims 18-21 has been amended into independent claims 1, 9, 10 and 11, please consider the following.

The Office Action supported the §112, second paragraph, rejection of claims 18-21 because "The new claims 18-21 recite "said allocating of said resource usage comprises at least one of evenly splitting said overlapping usage between said two different service requests and said overlapping

usage in a weighted manner ... " There two problems. One is that "said overlapping usage" and "said

two different service requests" lack antecedent basis. This leads to the second issue, which is, if one

has overlapping requests as required by the independent claims, it is contrary to the requirement of

"said two different service requests". For the purposes of examination, the examiner will consider the

new claims to cover the concept that usage overlaps, but the requests do not. From paragraph

[0020]."

Both problems discussed by the Examiner, have been addressed in the amendments to the

independent claims. Specifically, the independent claims now refer to "allocating overlapping

usage of the computer between at least two overlapping service requests, the overlapping service

requests being from different users, by one of evenly splitting the overlapping usage between the

overlapping service requests and splitting the overlapping usage in a weighted manner based

upon respective durations of the overlapping service requests". Thus, there are not antecedent

basis issues. Furthermore, the claim language clarifies that it is covering both overlapping usage

and overlapping service requests.

Support for such claim language is found in paragraphs [0022]-[0025] of the

specification. That is, paragraph [0022] indicates that there may be situations where multiple

users attempt to access the same service at the same time. This could be handled in two different

ways. As discussed in paragraph [0023], referencing Figure 2, in the first case sequential

servicing is provided such that usage may overlap, but not requests. However, alternatively, as

discussed in paragraphs [0024]-[0025] which references Figure 3, the system can be configured

to handle both overlapping usage and overlapping requests from different users. Table 1 within

the specification further provides an algorithm suitable for dividing the resource usage between different overlapping requests.

II.   The Prior Art Rejections

Claims 1, 3-12, and 14-17 stand rejected under 35 U.S.C. §102(b) as being anticipated by Halliday, et al. (U.S. Publication No. 2002/0083003), hereinafter referred to as Halliday. Applicants respectfully traverse these rejections because the cited prior art reference does not teach or suggest the following feature of amended independent claim 1 or the similar features in amended independent claims 9, 10 or 11: (1) "metering use of network-accessible computer resources by multiple users of the computer resources during a same time period"; (2) "recording, as process accounting information, the use of the computer resources for a plurality of processes that relate to service requests made by the users;" (3) "recording service request information for the service requests made by the users; (4) "correlating the recorded process accounting information and the recorded service request information;" and (5) "providing resource usage information for each of the service requests for each of the users based upon the correlated recorded process accounting information and the recorded service request information, said providing comprising allocating overlapping usage of the computer resources between at least two overlapping service requests, the overlapping service requests being from different users, by one of evenly splitting the overlapping usage between the overlapping service requests and splitting the overlapping usage in a weighted manner based upon respective durations of the overlapping service requests."

The claimed invention provides metering of the use of network-accessible computer

resources by multiple users requesting services. More specifically, process accounting information is recorded, together with service request logs written by e-service applications. These two sets of information are aggregated and correlated, to generate usage metrics relating to resource usage for individual service requests. Specifically, a correlator uses a heuristic procedure to allocate the overlapping usage of resources between requests, which may also be overlapping. Such per-request information can be used as a basis for charging users making such requests.

Generally, the Office Action asserts that the prior art of record discloses all of the features of the claimed invention. However, nothing within Halliday mentions metering of the use of network-accessible computer resources by multiple users requesting services. Rather Halliday relates to the field of software licensing, and more specifically, to a system for providing centralized time based charging and/or metering of an application by a user on the user's own computer (see paragraph [0003]). Specifically, as discussed in paragraph [0053] of Halliday, an application is downloaded by a user or otherwise obtained by the user for use on his own computer. All software usage by the user is then metered on the client system and this metered usage is reported to a metering server located in a host site where the software usage is accounted for and charged. Metering can include determining if the user is authorized to run the application and stopping the application if authorization is not found (see paragraph [0075]).

In the Office Action, on page 4, the Examiner asserts that the "applications" of Halliday are equated to the service requests of the present invention. The Applicants respectfully disagree.

Specifically, as mentioned above, in Halliday an application is downloaded or installed on a user's own computer and the user's use of this locally-installed application is monitored (also referred to in Halliday as metering) so that the user can be charged. No "service request" is made by the user for the use of network-accessible computer resources. Consequently, in Halliday there is no recording of the use of computer resources for a plurality of processes that relate to service requests made by users and also no recording of service request information for such service requests made by users. Additionally, because there are no service requests, there is no correlating of recorded process accounting information and recorded service request information and no providing of resource usage information for each service request for each of user based upon such correlated recorded process accounting and service request information. There is only logging and reporting out of the actual use by a user of a locally-installed application. Furthermore, it should be noted that in the present application network-accessible computer resources can be used simultaneously to execute multiple service requests from multiple users, whereas in Halliday a single locally-installed application on a client computer is operated by a single user logged onto the client computer.

In the Office Action, on page 5, the Examiner further asserts that "Page 5, paragraph [0077] [of Halliday] shows overlapping requests, includes active lists, it then checks at 9B for the existence of another metering monitor running on the same client computer using the same the configuration file. If such a metering monitor exists, the newly started monitor quits." The Applicants respectfully disagree.

Specifically, paragraph [0077] refers to Figure 9 which presents an overall depiction of the metering monitor's function. The first step performed by a metering monitor on a client's

computer is to read the computer's configuration file. If it determines that another metering monitor is running on the same computer, it quits. Otherwise, it registers its identity and the identify of the computer with the billing site's metering server. This paragraph does not disclose overlapping requests, just the potential that a single client computer may have multiple metering monitors that can report to the billing site's metering server, but only one such monitor will run at a time.

The Office Action further cites a Webster's dictionary definition of the word "allocate" and indicates "Multiple clients are using vendor code (a computing resource), which means that vendor code has been set apart for their use or vendor code is being allocated for each client. Because the system has a means for disabling the code, it can refuse to allocate resource usage. The overlapping request is addressed above. The system uses a pool of features in order to provide an application. A feature is an atomic chargeable unit of functionality. It is in this way the overlapping usage or features used in more than one application can be allocated for different applications or service requests." The Applicants respectfully disagree.

Specifically, paragraph [0056-][0057] of Halliday indicates that applications are executed and, as the applications execute, "vendor code calls to the client library to indicate that features are in use". The library will forward this information to a metering monitor. The metering monitor will then associate this application on the client's computer with a server account via the map of logged-in users and forward the information to the billing site's metering server (i.e., the logon process maps the local user on the client computer to an account held in a remote database, and such account will be charged as usage of an application is accumulated). While paragraph [0057], mentions the term "vendor code" in this context, it is not mentioned or explained

anywhere else in the Halliday specification. Based on the context in paragraph [0057], Halliday simply discloses that a vendor code is located on each client application and this vendor code is used to call "the client library to indicate that features are in use". Nothing in the specification indicates that vendor code is set apart or allocated for use by multiple users, as indicated in the Office Action. Furthermore, nothing in the specification refers to allocating overlapping usage of computer resources, much less to the claimed feature of "allocating overlapping usage of the [network-accessible] computer resources between at least two overlapping service requests, the overlapping service requests being from different users, by one of evenly splitting the overlapping usage between the overlapping service requests and splitting the overlapping usage in a weighted manner based upon respective durations of the overlapping service requests."

Therefore, the Applicants submit that amended independent claims 1, 9, 10, and 11 are patentable over the cited prior art reference. Furthermore, dependent claims 3-8 and 12-17 are similarly patentable, not only by virtue of their dependency from a patentable independent claim, but also by virtue of the additional features of the invention they define. Moreover, the Applicants note that all claims are properly supported in the specification and accompanying drawings, and no new matter is being added. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections.

III.   Formal Matters and Conclusion

With respect to the rejections to the claims, the claims have been amended, above, to overcome these rejections. In view of the foregoing, Applicants submit that claims 1, 3-12, and 14-17, all the claims presently pending in the application, are patentably distinct from the prior

art of record and are in condition for allowance. Therefore, the Examiner is respectfully requested to reconsider and withdraw the rejections to the claims and further to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary. Please charge any deficiencies and credit any overpayments to Attorney's Deposit Account Number 09-0441.

Respectfully submitted,

Dated: July 14, 2008   /Pamela M. Riley/
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